What is "Lean" ?

Lean philosophy = "to create the most value while using the fewest resources."

Lean Concepts and Principles

- Know your customer – who they are and what they want
- Value is defined by the customer
- Keep "it" simple
- Do "it" right the first time

Lean Concepts and Principles

- Look at "it" from the customer's perspective
- Create value in "it" based on customers needs and wants
- VALUE-ADDED
- Eliminate or minimize that which does not create value
- WASTE

Lean Concepts and Principles
" 8 things that do NOT add value"
WASTE

1) Errors
2) Excess inventory
3) Waiting
4) Doing unnecessary things
5) Underutilized people
6) Excess people motion
7) Over production
8) Excess transportation

What is Waste?

Waste is anything other than the minimum amount of equipment, materials, parts, space, and worker's time which are absolutely necessary to add value to the product

-Shoichiro Toyoda

President, Toyota

Value Stream Mapping VSM and Lean

VSM is a practical and visual tool that:

- allows you to identify the steps, procedures, or protocols that create value in "it"
- allows you to identify the non value-added activities, tasks, steps, processes in "it"

And creates a plan to make these changes

Integral Phases of VSM

- Current State – How "it" is now.
- Future State – How "it" should be.
- Kaizen Event – Identified challenges to be addressed

How VSM Works..
The Current State – the beginning

- Identify a specific process to review, with a specific starting point and stopping point
- Map the CURRENT state of the process utilizing Data Sheets for each step

VSM Data Sheet

Name of Process	
# People	Special Considerations

C-T CYCLE TIME	
V-A VALUE ADDED	
C-O CHANGE OVER	
U-T UP TIME	
FPY FIRST PASS YIELD	
NOTES	

INVENTORY

S-T STAFF TIME	

VSM Data Sheet Defined

- Time data measurement must be the same all steps – usually minutes, but use what best corresponds to the process being mapped.

- Don’t get bogged down in numbers or percentages – use the best data available to you

INVENTORY
AMOUNT OF INVENTORY BEFORE NEXT PROCESS
THE AMOUNT OF TIME ASSOCIATED WITH THE INVENTORY

S-T **STAFF TIME**	The amount of staff time involved in this step in the process.

NAME OF THE STEP/PROCESS	
# 0F PEOPLE DOING THIS STEP AT THE SAME TIME	**NOTATIONS ABOUT SPECIAL NEEDS, SUCH AS TRAINING, LIMITATIONS, ETC**
C-T **CYCLE TIME**	The amount of time it takes to complete one piece from the end of the previous operation to the end of the current operation
V-A **VALUE ADDED**	An estimate of the percentage of Value Added Time in the total time
C-O **CHANGE OVER**	The amount of time it takes to change over the machine or program from the last good piece of the previous set-up to the first good piece of the current set-up
U-T **UP TIME**	The amount time the program, printer, copier, etc are available compared to the time they are expected to run, expressed as a percentage
FPY **FIRST PASS YIELD**	The percentage of time that quality standards are met the first time through
NOTES	Any other information about the process that is important and not captured in other data boxes

VSM Data Sheet Inventory

- Amount of Inventory waiting for this step of the process
- ✓ # of forms, files, cases, etc. waiting
- The amount of time associated with the inventory – time measurement
- ✓ If you have 20 forms waiting for you to input, and each takes 10 mins to process then you have 200 mins of inventory (20 forms x 10 minutes/form= 200 minutes)

VSM Data Sheet
Staff time

- This is the amount of staff time actual used to perform this step; include the time spent waiting if performing other work is unlikely. Do NOT include the time spent waiting if performing other work is likely.
- If an employee has to fax a report to 20 individuals and it takes 15 minutes to program and feed the fax, and 45 minutes for the fax machine to finish – the staff time involved is 15 minutes
- The 45 minutes will be captured, but not in this data box

VSM Data Sheet
of People

- The number of staff/employees doing this same step at the same time
- ✓ If a step needs two people working together in order to perform the work, then this would be filled in with 2

VSM Data Sheet Special Considerations

- Notations about special needs, such as training, limitations, licenses, certifications, etc.

VSM Data Sheet
Cycle Time C-T

- Time measurement
- The amount of time it takes to complete this step measured from the end of the previous step to the end of this step, including the change over time.

Change over time is also identified on the data sheet

VSM Data Sheet
Value Added V-A

- An estimate of the percentage of “value added” time in the total time of the step.
- How much of the time spent on this step is value added? (Not, is this step value added?)
- This is filled in as a percentage.

Definition of Value Added

- Value Added = Any activity that increases the form or function of the product or service.
  - These are the activities the customer is willing to pay for.
- Non-Value Added = Any activity that does not add form or function, or is not necessary.
  - These activities should be eliminated, simplified, reduced or integrated.
  - ✓ Not unusual to see 60% and more NVA

Value Added or Non-Value Added ?

Questions and Answers in the handout.

VSM Data Sheet
Value Added V-A

- An estimate of the percentage of “value added” time in the total time of the step.
- How much of the time spent on this step is value added? (Not, is this step value added?)
- This is filled in as a percentage.

VSM Data Sheet
Change Over C-O

- Time measurement
- The amount of time it takes to change over the machine or program from the end of the previous step to the beginning of the current step
- Creating a new file for a new customer
- Changing the computer program you use
- Searching your desk for the correct form

VSM Data Sheet
Up Time U-T

- Expressed as a percentage
- The amount of time a person, program, printer, copier, etc are available compared to the time they are expected to run
  - If a printer is down an hour a day when you need it, then U-T is 87.5% (7/8)
  - If a supervisor is only available for their signature 2 days a week, then U-T is 40% (2/5)

VSM Data Sheet
First Pass Yield - FPY

- Expressed as percentage
- The percentage of time that quality standards are met the FIRST time through
  - How much of the time is the step completed correctly the FIRST time
  - If you have to redo anything, that is a strike against FPY

VSM Data Sheet Notes

- Any other information about the process that is important and not captured in the data boxes
- If there isn't enough room, use Post-It notes (stickies)
- The number of notes under a VSM Data sheet may give you an indication of which steps that may need further focus

Current State Procedures

- Remember this is HOW IT IS NOW, the Current State
- Each team member reviews, brainstorms the steps of the process as it is know to them
- Each Participant writes down the steps and posts them on the wall using “stickies”
- Then as a team, steps are developed by grouping.
- New steps may be identified and added by the group

VSM – Current State

- For each step identified in the process being reviewed, complete a VSM Data Sheet
- All data must be entered
- Don’t get bogged down in numbers or percentages – use the best data available to you
- Start at the last step (closest to the customer) and always keep the CUSTOMER in mind

Congratulations

- You have now completed the Current State !

- Questions? Comments?